



(12) **United States Patent**  
**Bauer**

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- (54) **DEVELOPMENT OF MULTIPLE CLASSES OF USER INTERFACES FOR A SOFTWARE APPLICATION** 7,949,954 B1 \* 5/2011 Jezek, Jr. .... G06F 3/048 705/37  
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(52) **U.S. Cl.**  
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See application file for complete search history.

#### (57) ABSTRACT

Methods and systems for developing multiple classes of user interfaces for a software application are disclosed. A master view of a software application is displayed, at a computer system, for use in developing multiple classes of user interfaces for the software application wherein each of the multiple classes pertain to at least one form factor for a device to execute the software application. Subordinate views are created, at the computer system, wherein each of the subordinate views pertain to one of the multiple classes of user interfaces and comprise deltas that alter the master view such that a first subordinate view is displayed based on the master view combined with a first group of the deltas for the first subordinate view. A change is propagated to the master view to each of the subordinate views, at the computer system. A change to the first subordinate view is stored, at the computer system, as a delta in the first group of the deltas. The software application is created, at the computer system, such that upon executing the software application at a first device, the software application will determine an appropriate user interface for the first device based on a form factor of the first device wherein the appropriate user interface is one of the multiple classes of user interfaces. The software application is sent to a first device wherein the software application comprises the multiple classes of user interfaces based on the master view and a plurality of groups of the deltas.

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**20 Claims, 3 Drawing Sheets**

